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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte STEPHAN HUEFFER, STEFAN SCHROEDER,
EINHARD WAGNER, THORSTEN RADLER, and
KARL VILL

Appeal 2009-014067
Application 10/524,047
Technology Center 1700

Decided: March 18, 2010

Before CHARLES F. WARREN, TERRY J. OWENS, and
MARK NAGUMO, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL
STATEMENT OF THE CASE

The Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 14-17, 21, 22, 24, 26, 28, 30, 32, 34, 36 and 38, which are all of the pending claims. We have jurisdiction under 35 U.S.C. § 6(b).

The Invention

The Appellants claim a method for tanning an animal hide. Claim 32 is illustrative:

32. A method for chrome-free and chrome tanning, comprising contacting an animal hide with a formulation comprising:

a clay mineral, which, after vigorous stirring for 30 minutes in water at 50°C, has a number average particle diameter of less than 2 µm, or a bimodal size distribution with a first, finely divided fraction, whose number average particle diameter is less than 0.5 µm, and a second, coarser fraction, whose number average particle diameter is less than 5 µm, determined in each case by the method according to ISO 13320-1, by combined laser light diffraction and light scattering, and wherein, the amount of the first, finely divided fraction is from 10 to 90% by weight;

and one or more substances selected from the group consisting of organic polymers, aldehyde tanning agents, sulfone tanning agents, resin tanning agents, phenol tanning agents, fatliquoring agents, vegetable tanning agents, dyes, pigments and mixtures thereof,

wherein the clay mineral is a phyllosilicate selected from the group consisting of kaolinite, smectite, muscovite, montmorillonite, bentonite, hectorite and mixtures thereof.

The References

Zorn	3,053,697	Sep. 11, 1962
Plapper	4,272,242	Jun. 9, 1981
Christner	5,102,422	Apr. 7, 1992
Komforth	6,033,590	Mar. 7, 2000
Cramer	2002/0192366 A1	Dec. 19, 2002

The Rejections

The claims stand rejected under 35 U.S.C. § 103 as follows:
claims 32, 34 and 36 over Komforth in view of Cramer; claims 14-17, 21, 22, 24, 26, 28, 30, 32 and 38 over Komforth in view of Zorn; claims 14, 16,

21, 24, 30 and 32 over Plapper in view of Cramer; and claims 14, 16, 21, 24, 30 and 32 over Plapper in view of Christner.

OPINION

We reverse the rejections. We need to address only the sole independent claim, i.e., claim 32.

Issue

Have the Appellants indicated reversible error in the Examiner's determination that the applied prior art would have rendered prima facie obvious, to one of ordinary skill in the art, a tanning method comprising contacting an animal hide with a phyllosilicate selected from kaolinite, smectite, muscovite, montmorillonite, bentonite, hectorite and mixtures thereof which has a number average particle diameter of less than 2 μm or a bimodal size distribution with a finely divided fraction having a number average particle diameter of less than 0.5 μm and a coarser fraction having a number average particle diameter less than 5 μm ?

Rejection over Komforth in view of Cramer

Findings of Fact

Komforth discloses "compositions for the simultaneous retanning and fatliquoring of pretanned leather or pelts" (col. 1, ll. 4-6). In addition to retanning and fatliquoring agents the composition can contain additives including carriers and impregnants (col. 4, ll. 3-7). Suitable carriers include kaolin (col. 4, ll. 20-22). The impregnants can improve resistance to abrasion, scuffing and other mechanical damage (col. 4, ll. 29-33).

Cramer discloses a nanoparticle system for modifying soft surfaces or, in some cases, hard surfaces to bring about desired benefits including resistance to abrasion (§ 0040). The nanoparticles can be kaolins such as

kaolinite or smectites such as bentonite, and their largest dimension is less than or equal to about 750 nm (§§ 0041, 0043). The nanoparticles can be included in a coating composition which “can be used on all types of soft surfaces, including but not limited to woven fibers, nonwoven fibers, leather, plastic, synthetic film and mixtures thereof” (§ 0069).

Analysis

The Appellants argue that “[w]hile Cramer indicates that the disclosed nanoparticles may achieve some desirable effects (*see, e.g., Cramer*, paragraph [0040]), there is no indication in Cramer of why clay nanoparticles of the particular particle size disclosed therein would have any utility as carriers in a retanning or fatliquoring composition, such as employed in Komforth” (Br. 5).

The Examiner argues that “Komforth invites the inclusion of kaolins and agents which improve the resistance to abrasion and scuffing into the compositions (column 4, lines [sic] 35)” (Ans. 3), and that because Cramer teaches that the nanoparticles provide soft surfaces which can be leather with resistance to abrasion, it would have been obvious to one of ordinary skill in the art to use Cramer’s kaolin nanoparticles as Komforth’s carrier kaolin (Ans. 4).

Establishing a prima facie case of obviousness of an invention comprising a combination of known elements requires “an apparent reason to combine the known elements in the fashion claimed.” *KSR Int’l. Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). The Examiner has not established that one of ordinary skill in the art would have considered a kaolin particle size which is suitable in a composition which provides abrasion resistance to leather to be suitable in a retanning and fatliquoring composition. Moreover,

Komforth's improved resistance to abrasion is provided by the impregnant (col. 4, ll. 29-33), not the carrier. Hence, the Examiner's reason for combining the references does not have a sound factual basis.

Rejection over Komforth in view of Zorn

Findings of Fact

Zorn fills leather with finely divided solid fillers to improve the leather's plumpness (col. 1, ll. 11-21, 54-60). The fillers have a preferred particle size of about 0.1 to 50 μ and can be kaolin (col. 1, l. 69 – col. 2, l. 4; col. 2, ll. 19-21).

Analysis

The Appellants argue that “[w]hile Zorn indicates that the disclosed fillers may improve the plumpness of leather (*see, e.g., Zorn*, column 1, line 20), there is no indication in Zorn of why fillers of the particular particle size disclosed therein would have any utility as carriers in a retanning or fatliquoring composition, such as employed in Komforth” (Br. 8).

The Examiner argues that one of ordinary skill in the art would have been motivated to use Zorn's kaolin particle size for Komforth's carrier kaolin “for the predictable result of effectively treating chrome tanned leathers” (Ans. 6).

Unlike Zorn, whose composition is used for filling tanned leather (col. 1, ll. 11-13; col. 2, ll. 26-29), Komforth's composition is used for tanning leathers (col. 1, ll. 4-6). The Examiner has not established that one of ordinary skill in the art would have considered a kaolin particle size to be suitable for tanning leather merely because it is suitable for filling tanned leather to improve its plumpness.

Rejection over Plapper in view of Cramer

Findings of Fact

Plapper discloses a tanning process comprising subjecting pickled uncured hides to chemical tanning or pretanning agents and auxiliary chemicals including a water-insoluble aluminosilicate which can be produced from calcinated (destructured) kaolin by hydrothermal treatment with aqueous alkali metal hydroxide (abstract; col. 7, l. 59 – col. 8, l. 7). The alkali metal aluminosilicate can be in finely divided form with particle sizes of 0.2 to 25 μ (col. 9, ll. 13-17). “The desired particle size can be adjusted subsequently, if desired, by grinding and air sifting” (col. 9, ll. 21-22). In an example the aluminosilicate is mixed with bentonite (col. 18, ll. 27-28).

Analysis

The Appellants argue that “[w]hile Cramer indicates that the disclosed nanoparticles may achieve some desirable effects (*see, e.g., Cramer*, paragraph [0040]), there is no indication in Cramer of why clay nanoparticles of the particular particle size disclosed therein would have any utility in a tanning composition, such as employed in Plapper” (Br. 9-10).

The Examiner argues that it would have been obvious to one of ordinary skill in the art to use the particle size of Cramer’s nanoparticles as the particle size of Plapper’s bentonite to improve abrasion resistance (Ans. 8).

Cramer’s disclosure regarding leather pertains to a coating composition applied to leather (§ 0069). The Examiner has not established that one of ordinary skill in the art would have considered a bentonite

particle size that is suitable in a coating composition applied to leather to be suitable in a composition for tanning pickled uncured hides.

Rejection over Plapper in view of Christner

Findings of Fact

Christner reduces creaming and settling of leather-making liquid enzyme formulations by dispersing therein inorganic powdered additives, particularly bentonite (col. 1, ll. 5-10; col. 4, ll. 61-65; col. 5, ll. 20-23). “As a rule, the commercial grades (flakes, particle sizes ranging from 0.5 to 5 microns) may be used” (col. 5, ll. 39-41). The liquid enzyme formulations are useful in the following operations on hides: 1) soaking, 2) hair loosening, liming and unhairing, 3) deliming and bating, and 4) pickling (col. 9, ll. 30-46).

Analysis

The Appellants argue that “[w]hile Christner indicates that the disclosed clays may prevent creaming and settling in liquid enzyme compositions (*see, e.g., Christner*, column 4, lines 61 to 65), there is no indication in Christner of why fillers of the particular particle size disclosed therein would have any utility in a tanning composition, such as employed in Plapper” (Br. 11).

The Examiner argues that it would have been obvious to one of ordinary skill in the art to use as Plapper’s bentonite particle size a size within Christner’s 0.5 to 5 μ range because, as set forth by Christner, that is the commercial grade bentonite particle size range (col. 5, ll. 39-41) (Ans. 10).

The Examiner has not established that one of ordinary skill in the art would have considered a bentonite particle size to be suitable in Plapper’s

composition merely because it is a commercial grade size. Even Christner does not disclose that the commercial grades always are suitable but, rather, teaches that those grades are suitable “[a]s a rule” (col. 5, ll. 39-41), and Christner teaches that it is advisable to subject the commercial grade particles to a treatment with shearing action (col. 5, ll. 41-43).

Conclusion of Law

The Appellants have indicated reversible error in the Examiner’s determination that the applied prior art would have rendered prima facie obvious, to one of ordinary skill in the art, a tanning method comprising contacting an animal hide with a phyllosilicate selected from kaolinite, smectite, muscovite, montmorillonite, bentonite, hectorite and mixtures thereof which has a number average particle diameter of less than 2 μm or a bimodal size distribution with a finely divided fraction having a number average particle diameter of less than 0.5 μm and a coarser fraction having a number average particle diameter less than 5 μm .

DECISION/ORDER

The rejections under 35 U.S.C. § 103 of claims 32, 34 and 36 over Komforth in view of Cramer, claims 14-17, 21, 22, 24, 26, 28, 30, 32 and 38 over Komforth in view of Zorn, claims 14, 16, 21, 24, 30 and 32 over Plapper in view of Cramer, and claims 14, 16, 21, 24, 30 and 32 over Plapper in view of Christner are reversed.

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It is ordered that the Examiner's decision is reversed.

REVERSED

kmm

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